This Listing of Claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS

Claim 1 (currently amended): A method of screening for early stage prostate cancer, the method comprising the step of assaying, ~~a level of a human endogenous MMTV-like subgroup 2 (HML-2) retrovirus encoded expression product~~ in a patient prostate or blood sample, an expression product of a prostate cancer associated virus (PCAV) wherein an increased level of said expression product ~~of at least 150%~~ relative to a control sample level indicates that the patient should undergo further testing for the presence of prostate cancer, and wherein said ~~expression product is an RNA corresponding to the gag or pol domain of said retrovirus, or is a polypeptide encoded by said RNA~~ PCAV expresses an RNA that hybridizes, under high stringency hybridization conditions, to a nucleotide sequence selected from the group consisting of SEQ ID NOS:7-10 and SEQ ID NOS:14-41 or to a complement of the nucleotide sequence.

Claim 2 (canceled)

Claim 3 (previously presented): The method of claim 1 wherein the patient sample is a prostate sample.

Claim 4 (currently amended): The method of claim 1 wherein the expression product is an RNA comprising a nucleotide sequence corresponding to the DNA sequence shown in SEQ ID NO:155.

Claim 5 (currently amended): The method of claim 4 wherein the expression product is an RNA comprising a nucleotide sequence corresponding to the DNA sequence shown in SEQ ID NO:5.

Claim 6 (previously presented): The method of claim 4 wherein the nucleotide sequence corresponding to the DNA sequence shown in SEQ ID NO:155 is at the 5′ end of the RNA.

Claims 7-9 (canceled)

Claim 10 (currently amended): The method of claim 1 wherein the expression product is a polypeptide ~~is detected using an antibody~~.

Claims 11-12 (canceled)

Claim 13 (previously presented): The method of claim 1 further comprising the step of enriching RNA in the patient sample.

Claim 14 (previously presented): The method of claim 1 wherein the expression product is detected using PCR, SDA, SSSR, LCR, TMA or NASBA.

Claim 15 (previously presented): The method of claim 14 wherein the PCR is RT-PCR.

Claims 16-38 (canceled)

Claim 39 (new): The method of claim 1 wherein the expression product is an RNA.

Claim 40 (new): The method of claim 39 wherein the expression product is an RNA corresponding to the Gag or Pol domain of the PCAV.

Claim 41 (new): The method of claim 10 wherein the expression product is a polypeptide encoded by an RNA corresponding to the Gag or Pol domain of the PCAV.

Claim 42 (new): The method of claim 40 wherein the expression product is an RNA comprising a nucleotide sequence corresponding to a DNA sequence selected from the group consisting of SEQ ID NOS:14-26, SEQ ID NO:40, and SEQ ID NO:41.

Claim 43 (new): The method of claim 41 wherein the expression product comprises a polypeptide encoded by an RNA comprising a nucleotide sequence corresponding to a DNA sequence selected from the group consisting of SEQ ID NOS:14-26, SEQ ID NO:40, and SEQ ID NO:41.

Claim 44 (new): The method of claim 1 wherein the PCAV expresses an RNA comprising a nucleotide sequence corresponding to a DNA sequence selected from the group consisting of SEQ ID NOS: 7-10 and SEQ ID NOS: 14-41.

Claim 45 (new): The method of claim 1 wherein the PCAV expresses all RNA sequences corresponding to DNA sequences selected from the group consisting of SEQ ID NOS:14-26, SEQ ID NO:40, and SEQ ID NO:41.

Claim 46 (new): The method of claim 1 wherein the increased level of the expression product is at least 150% relative to said control sample.

Claim 47 (new): A method of screening for early stage prostate cancer, the method comprising the step of assaying, in a patient prostate or blood sample, an expression product of a prostate cancer associated virus (PCAV) wherein an increased level of said expression product relative to a control sample level indicates that the patient should undergo further testing for the presence of prostate cancer, and wherein said PCAV expresses an RNA comprising a nucleotide sequence corresponding to a DNA sequence having at least 90% sequence identity to any of SEQ ID NOS:7-10 or SEQ ID NOS:14-41.

Claim 48 (new): The method of claim 47 wherein the patient sample is a prostate sample.

Claim 49 (new): The method of claim 47 wherein the expression product is an RNA.

Claim 50 (new): The method of claim 49 wherein the expression product is an RNA comprising a nucleotide sequence corresponding to the DNA sequence shown in SEQ ID NO:155.

Claim 51 (new): The method of claim 50 wherein the expression product is an RNA comprising a nucleotide sequence corresponding to the DNA sequence shown in SEQ ID NO:5.

Claim 52 (new): The method of claim 50 wherein the nucleotide sequence corresponding to the DNA sequence shown in SEQ ID NO:155 is at the 5′ end of the RNA.

Claim 53 (new): The method of claim 49 wherein the expression product is an RNA corresponding to the Gag or Pol domain of the PCAV.

Claim 54 (new): The method of claim 53 wherein the expression product is an RNA comprising a nucleotide sequence corresponding to a DNA sequence selected from the group consisting of SEQ ID NOS:14-26, SEQ ID NO:40, and SEQ ID NO:41.

Claim 55 (new): The method of claim 47 wherein said PCAV expresses an RNA comprising a nucleotide sequence corresponding to a DNA sequence having at least 95% sequence identity to any of SEQ ID NOS:7-10 or SEQ ID NOS:14-41.

Claim 56 (new): The method of claim 55 wherein said PCAV expresses an RNA comprising a nucleotide sequence corresponding to a DNA sequence having at least 98% sequence identity to any of SEQ ID NOS:7-10 or SEQ ID NOS:14-41.

Claim 57 (new): The method of claim 56 wherein said PCAV expresses an RNA comprising a nucleotide sequence corresponding to a DNA sequence having at least 99% sequence identity to any of SEQ ID NOS:7-10 or SEQ ID NOS:14-41.

Claim 58 (new): The method of claim 57 wherein said PCAV expresses an RNA comprising a nucleotide sequence corresponding to a DNA sequence selected from the group consisting of SEQ ID NOS:7-10 and SEQ ID NOS:14-41.

Claim 59 (new): The method of claim 47 wherein the expression product is a polypeptide.

Claim 60 (new): The method of claim 59 wherein the expression product is a polypeptide encoded by an RNA corresponding to the Gag or Pol domain of the PCAV.

Claim 61 (new): The method of claim 60 wherein the expression product comprises a polypeptide encoded by an RNA comprising a nucleotide sequence corresponding to a DNA sequence selected from the group consisting of SEQ ID NOS:14-26, SEQ ID NO:40, and SEQ ID NO:41.

Claim 62 (new): The method of claim 47 wherein the increased level of the expression product is at least 150% relative to said control sample.

Claim 63 (new): A method of screening for early stage prostate cancer, the method comprising the step of assaying, in a patient prostate or blood sample, an expression product of a prostate cancer associated virus (PCAV) wherein an increased level of said expression product relative to a control sample level indicates that the patient should undergo further testing for the presence of prostate cancer, and wherein said PCAV expresses an RNA comprising a nucleotide sequence corresponding to a DNA sequence having at most about 5-15% base pair mismatches relative to any of SEQ ID NOS:7-10 or SEQ ID NOS:14-41.

Claim 64 (new): The method of claim 63 wherein the patient sample is a prostate sample.

Claim 65 (new): The method of claim 63 wherein the expression product is an RNA.

Claim 66 (new): The method of claim 65 wherein the expression product is an RNA comprising a nucleotide sequence corresponding to the DNA sequence shown in SEQ ID NO:155.

Claim 67 (new): The method of claim 66 wherein the expression product is an RNA comprising a nucleotide sequence corresponding to the DNA sequence shown in SEQ ID NO:5.

Claim 68 (new): The method of claim 66 wherein the nucleotide sequence corresponding to the DNA sequence shown in SEQ ID NO:155 is at the 5′ end of the RNA.

Claim 69 (new): The method of claim 65 wherein the expression product is an RNA corresponding to the Gag or Pol domain of the PCAV.

Claim 70 (new): The method of claim 69 wherein the expression product is an RNA comprising a nucleotide sequence corresponding to a DNA sequence selected from the group consisting of SEQ ID NOS:14-26, SEQ ID NO:40, and SEQ ID NO:41.

Claim 71 (new): The method of claim 63 wherein said PCAV expresses an RNA comprising a nucleotide sequence corresponding to a DNA sequence having at most about 2-5% base pair mismatches relative to any of SEQ ID NOS:7-10 or SEQ ID NOS:14-41.

Claim 72 (new): The method of claim 71 wherein said PCAV expresses an RNA comprising a nucleotide sequence corresponding to a DNA sequence having at most about 1-2% base pair mismatches relative to any of SEQ ID NOS:7-10 or SEQ ID NOS:14-41.

Claim 73 (new): The method of claim 63 wherein the expression product is a polypeptide.

Claim 74 (new): The method of claim 73 wherein the expression product is a polypeptide encoded by an RNA corresponding to the Gag or Pol domain of the PCAV.

Claim 75 (new): The method of claim 74 wherein the expression product comprises a polypeptide encoded by an RNA comprising a nucleotide sequence corresponding to a DNA sequence selected from the group consisting of SEQ ID NOS:14-26, SEQ ID NO:40, and SEQ ID NO:41.

Claim 76 (new): The method of claim 63 wherein the increased level of the expression product is at least 150% relative to said control sample.

Claim 77 (new): A method of screening for early stage prostate cancer, the method comprising the step of assaying, in a patient prostate or blood sample, an expression product of a human endogenous MMTV-like subgroup 2 (HML-2) retrovirus, wherein an increased level of said expression product relative to a control sample level indicates that the patient should undergo further testing for the presence of prostate cancer, and wherein the HML-2 retrovirus is HERV-K(CH).

Claim 78 (new): The method of claim 77 wherein the patient sample is a prostate sample.

Claim 79 (new): The method of claim 77 wherein the expression product is an RNA.

Claim 80 (new): The method of claim 79 wherein the expression product is an RNA comprising a nucleotide sequence corresponding to the DNA sequence shown in SEQ ID NO:155.

Claim 81 (new): The method of claim 80 wherein the expression product is an RNA comprising a nucleotide sequence corresponding to the DNA sequence shown in SEQ ID NO:5.

Claim 82 (new): The method of claim 80 wherein the nucleotide sequence corresponding to the DNA sequence shown in SEQ ID NO:155 is at the 5′ end of the RNA.

Claim 83 (new): The method of claim 79 wherein the expression product is an RNA corresponding to the Gag or Pol domain of HERV-K(CH).

Claim 84 (new): The method of claim 83 wherein the expression product is an RNA comprising a nucleotide sequence corresponding to a DNA sequence selected from the group consisting of SEQ ID NOS:14-26, SEQ ID NO:40, and SEQ ID NO:41.

Claim 85 (new): The method of claim 77 wherein the expression product is a polypeptide.

Claim 86 (new): The method of claim 85 wherein the expression product is a polypeptide encoded by an RNA corresponding to the Gag or Pol domain of HERV-K(CH).

Claim 87 (new): The method of claim 86 wherein the expression product is a polypeptide encoded by an RNA comprising a nucleotide sequence corresponding to a DNA sequence selected from the group consisting of SEQ ID NOS:14-26, SEQ ID NO:40, and SEQ ID NO:41.

Claim 88 (new): The method of claim 77 wherein said increased level of the expression product is at least 150% relative to the control sample.

Claim 89 (new): A method of screening for early stage prostate cancer, the method comprising the step of assaying, in a patient prostate or blood sample, an expression product of a human endogenous MMTV-like subgroup 2 (HML-2) retrovirus, wherein the expression product comprises

an RNA that hybridizes, under high stringency hybridization conditions, to a nucleotide sequence selected from the group consisting of SEQ ID NOS:7-10 and SEQ ID NOS:14-41 or to a complement of the nucleotide sequence, or

a polypeptide encoded by the RNA.

Claim 90 (new): The method of claim 89 wherein the patient sample is a prostate sample.

Claim 91 (new): The method of claim 89 wherein the expression product is an RNA comprising a nucleotide sequence corresponding to the DNA sequence shown in SEQ ID NO:155.

Claim 92 (new): The method of claim 91 wherein the expression product is an RNA comprising a nucleotide sequence corresponding to the DNA sequence shown in SEQ ID NO:5.

Claim 93 (new): The method of claim 91 wherein the nucleotide sequence corresponding to the DNA sequence shown in SEQ ID NO:155 is at the 5′ end of the RNA.

Claim 94 (new): The method of claim 89 wherein the expression product is an RNA comprising a nucleotide sequence corresponding to a DNA sequence selected from the group consisting of SEQ ID NOS: 7-10 and SEQ ID NOS: 14-41.

Claim 95 (new): The method of claim 94 wherein the expression product is an RNA comprising a nucleotide sequence corresponding to a DNA sequence selected from the group consisting of SEQ ID NOS:14-26, SEQ ID NO:40, and SEQ ID NO:41.

Claim 96 (new): The method of claim 89 wherein the retrovirus expresses all RNA sequences corresponding to DNA sequences selected from the group consisting of SEQ ID NOS:14-26, SEQ ID NO:40, and SEQ ID NO:41.

Claim 97 (new): The method of claim 89 wherein the expression product is a polypeptide encoded by an RNA comprising a nucleotide sequence corresponding to a DNA sequence selected from the group consisting of SEQ ID NOS:14-26, SEQ ID NO:40, and SEQ ID NO:41.

Claim 98 (new): A method of screening for early stage prostate cancer, the method comprising the step of assaying, in a patient prostate or blood sample, an expression product of a human endogenous MMTV-like subgroup 2 (HML-2) retrovirus,

wherein the expression product is an RNA comprising a nucleotide sequence corresponding to a DNA sequence having at least 90% sequence identity to any of SEQ ID NOS:7-10 or SEQ ID NOS:14-41, or

a polypeptide encoded by the RNA.

Claim 99 (new): The method of claim 98 wherein the patient sample is a prostate sample.

Claim 100 (new): The method of claim 98 wherein the expression product is an RNA comprising a nucleotide sequence corresponding to the DNA sequence shown in SEQ ID NO:155.

Claim 101 (new): The method of claim 100 wherein the expression product is an RNA comprising a nucleotide sequence corresponding to the DNA sequence shown in SEQ ID NO:5.

Claim 102 (new): The method of claim 100 wherein the nucleotide sequence corresponding to the DNA sequence shown in SEQ ID NO:155 is at the 5′ end of the RNA.

Claim 103 (new): The method of claim 98 wherein the expression product is an RNA comprising a nucleotide sequence corresponding to a DNA sequence having at least 95% sequence identity to any of SEQ ID NOS:7-10 or SEQ ID NOS:14-41, or a polypeptide encoded by the RNA.

Claim 104 (new): The method of claim 103 wherein the expression product is an RNA comprising a nucleotide sequence corresponding to a DNA sequence having at least 98% sequence identity to any of SEQ ID NOS:7-10 or SEQ ID NOS:14-41, or a polypeptide encoded by the RNA.

Claim 105 (new): The method of claim 104 wherein the expression product is an RNA comprising a nucleotide sequence corresponding to a DNA sequence having at least 99% sequence identity to any of SEQ ID NOS:7-10 or SEQ ID NOS:14-41, or a polypeptide encoded by the RNA.

Claim 106 (new): The method of claim 105 wherein the expression product is an RNA comprising a nucleotide sequence corresponding to a DNA sequence selected from the group consisting of SEQ ID NOS:7-10 and SEQ ID NOS:14-41.

Claim 107 (new): A method of screening for early stage prostate cancer, the method comprising the step of assaying, in a patient prostate or blood sample, an expression product of a human endogenous MMTV-like subgroup 2 (HML-2) retrovirus,

wherein the expression product is an RNA comprising a nucleotide sequence corresponding to a DNA sequence having at most about 5-15% base pair mismatches relative to any of SEQ ID NOS:7-10 or SEQ ID NOS:14-41, or

a polypeptide encoded by the RNA.

Claim 108 (new): The method of claim 107 wherein the patient sample is a prostate sample.

Claim 109 (new): The method of claim 107 wherein the expression product is an RNA comprising a nucleotide sequence corresponding to the DNA sequence shown in SEQ ID NO:155.

Claim 110 (new): The method of claim 109 wherein the expression product is an RNA comprising a nucleotide sequence corresponding to the DNA sequence shown in SEQ ID NO:5.

Claim 111 (new): The method of claim 109 wherein the nucleotide sequence corresponding to the DNA sequence shown in SEQ ID NO:155 is at the 5′ end of the RNA.

Claim 112 (new): The method of claim 107 wherein the expression product is an RNA comprising a nucleotide sequence corresponding to a DNA sequence having at most about 2-5% base pair mismatches relative to any of SEQ ID NOS:7-10 or SEQ ID NOS:14-41, or a polypeptide encoded by the RNA.

Claim 113 (new): The method of claim 112 wherein the expression product is an RNA comprising a nucleotide sequence corresponding to a DNA sequence having at most about 1-2% base pair mismatches relative to any of SEQ ID NOS:7-10 of SEQ ID NOS:14-41, or a polypeptide encoded by the RNA.